

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference CID 307 AU C	FOR FURTHER ACTION	See item 4 below
International application No. PCT/AU2004/000920	International filing date (<i>day/month/year</i>) 09 July 2004 (09.07.2004)	Priority date (<i>day/month/year</i>) 09 July 2003 (09.07.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant COCHLEAR LIMITED		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 09 January 2006 (09.01.2006)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; margin-top: 10px;">Dorothee Mülhausen</div> Telephone No. +41 22 338 87 40

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

REC'D 23 NOV 2004

WIFO

PCT

To:

Cochlear Limited
14 Mars Road
Lane Cove NSW 2066

20/1

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **17 NOV 2004**

Applicant's or agent's file reference
CID307AUC

FOR FURTHER ACTION
See paragraph 2 below

International application No.

PCT/AU2004/000920

International filing date (day/month/year)

9 July 2004

Priority date (day/month/year)

9 July 2003

International Patent Classification (IPC) or both national classification and IPC

Int. Cl. ⁷ A61N 1/05 H01L 21/64

Applicant

COCHLEAR LIMITED et al

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the IPEA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustalia.gov.au
Facsimile No. (02) 6285 3929

Authorized Officer

MATTHEW FORWARD

Telephone No. (02) 6283 2606

BEST AVAILABLE COPY

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/AU2004/000920

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

BEST AVAILABLE COPY

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/AU2004/000920

Box No. V **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims 1 to 38	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 18, 27 to 38	YES
	Claims 19 to 26	NO
Industrial applicability (IA)	Claims 1 to 38	YES
	Claims	NO

2. Citations and explanations:

The following documents identified in the International Search Report have been considered for the purposes of this report:

- D1 WO 2001083855 (ISIS INNOVATION LIMITED)
- D2 DE 2720109 (IBM CORP.)
- D3 EP 0175654 (SELENIA INDUSTRIE ELETTRONICHE ASSOCIATE S.p.A.)
- D4 US 2002/0137243 (CHEN)
- D5 WO 2002087685 (SECOND SIGHT, LLC)
- D6 WO 2002089907 (COCHLEAR LIMITED)

The present application defines a method (claim 1) of forming a patterned conductive element by depositing a "supplementary material" on a sheet of conductive parent material; applying a carrier material over the supplementary material to form a sheet of "semi-finished material"; removing portions of the conductive element corresponding to a pattern and releasing the carrier material from the semi finished sheet. Also defined is a method of making a sheet of semi-finished material (claim 19), wherein supplementary material is deposited on a platinum sheet; carrier material is applied over the supplementary material and the semi-finished sheet has a thickness of less than 100 micrometres. The present application further defines a method (claim 27) of forming an electrode array with similar steps to claim 1. The conductive material is more narrowly defined as a platinum sheet and the pattern is defined as including a linear array of stimulating or recording pads.

Document D1 discloses a superconductor with a Nickel or Nickel alloy base. A layer of a metal (Cr, Ni, Pd, Pt, Ru and especially Ag, is deposited on this layer, and then a superconductivity layer is applied over that. The resultant material is 10 nanometres to 10 micrometres thick. It is considered that this document teaches towards a semi-finished material as defined in claim 19. The person skilled in the art would recognise that Platinum, with some similar properties to Nickel, could be used as a base without recourse to inventive facility. Claims 19 to 26 are considered to lack an inventive step in view of this document.

Document D2 provides a microelectronic component of a silicon dioxide substrate (10) with a metal layer (12), dielectric layer (13) and a mask (16). A negative pattern results from the mask to produce a semi-conductor. D3 produces a thin film resistor by adding layers of metal alloys (NiCr, Pt Au) on an Aluminium oxide substrate. A mask is applied between sputtering applications of each layer.

BEST AVAILABLE COPY

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International Application No.

PCT/AU2004/000920

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

In D4 a LED semiconductor is formed on a substrate (60) by growing a succession of LED layers (62, 64, 66). A metallic (Au/Be or Au/Zn) electrode layer (68) and a metal layer (70) are applied. The metal (70) layer may be Pt amongst the usual Au, Ni etc and can be as thin as 20 nanometres. The substrate is removed to produce an LED array on a metal backing.

D5 recites a micro-machined electrode array of a polyimide substrate, a layer of Ti, Pt, Au or an Au/Pt alloy.

In D6 portions of a platinum sheet are removed using EDM to produce an electrically conductive component.

None of the cited documents D1 to D6 are considered to disclose the features of independent claims 1 or 27. Further none of documents D2 to D6 are considered to disclose the features of independent claim 19.

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

REC'D 23 NOV 2004
WIPO PCT

To:

Cochlear Limited
14 Mars Road
Lane Cove NSW 2066

20/1

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 17 NOV 2004	
FOR FURTHER ACTION See paragraph 2 below	
Applicant's or agent's file reference CID307AUC	
International application No. PCT/AU2004/000920	International filing date (day/month/year) 9 July 2004
	Priority date (day/month/year) 9 July 2003
International Patent Classification (IPC) or both national classification and IPC Int. Cl.⁷ A61N 1/05 H01L 21/64	
Applicant COCHLEAR LIMITED et al	

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the IPEA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized Officer

MATTHEW FORWARD

Telephone No. (02) 6283 2606

BEST AVAILABLE COPY

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/AU2004/000920

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

BEST AVAILABLE COPY

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/AU2004/000920

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1 to 38	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 18, 27 to 38	YES
	Claims 19 to 26	NO
Industrial applicability (IA)	Claims 1 to 38	YES
	Claims	NO

2. Citations and explanations:

The following documents identified in the International Search Report have been considered for the purposes of this report:

- D1 WO 2001083855 (ISIS INNOVATION LIMITED)
- D2 DE 2720109 (IBM CORP.)
- D3 EP 0175654 (SELENIA INDUSTRIE ELETTRONICHE ASSOCIATE S.p.A.)
- D4 US 2002/0137243 (CHEN)
- D5 WO 2002087685 (SECOND SIGHT, LLC)
- D6 WO 2002089907 (COCHLEAR LIMITED)

The present application defines a method (claim 1) of forming a patterned conductive element by depositing a "supplementary material" on a sheet of conductive parent material; applying a carrier material over the supplementary material to form a sheet of "semi-finished material"; removing portions of the conductive element corresponding to a pattern and releasing the carrier material from the semi finished sheet. Also defined is a method of making a sheet of semi-finished material (claim 19), wherein supplementary material is deposited on a platinum sheet; carrier material is applied over the supplementary material and the semi-finished sheet has a thickness of less than 100 micrometres. The present application further defines a method (claim 27) of forming an electrode array with similar steps to claim 1. The conductive material is more narrowly defined as a platinum sheet and the pattern is defined as including a linear array of stimulating or recording pads.

Document D1 discloses a superconductor with a Nickel or Nickel alloy base. A layer of a metal (Cr, Ni, Pd, Pt, Ru and especially Ag, is deposited on this layer, and then a superconductivity layer is applied over that. The resultant material is 10 nanometres to 10 micrometres thick. It is considered that this document teaches towards a semi-finished material as defined in claim 19. The person skilled in the art would recognise that Platinum, with some similar properties to Nickel, could be used as a base without recourse to inventive facility. Claims 19 to 26 are considered to lack an inventive step in view of this document.

Document D2 provides a microelectronic component of a silicon dioxide substrate (10) with a metal layer (12), dielectric layer (13) and a mask (16). A negative pattern results from the mask to produce a semi-conductor. D3 produces a thin film resistor by adding layers of metal alloys (NiCr, Pt Au) on an Aluminium oxide substrate. A mask is applied between sputtering applications of each layer.

BEST AVAILABLE COPY

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International Application No.

PCT/AU2004/000920

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

In D4 a LED semiconductor is formed on a substrate (60) by growing a succession of LED layers (62, 64, 66). A metallic (Au/Be or Au/Zn) electrode layer (68) and a metal layer (70) are applied. The metal (70) layer may be Pt amongst the usual Au, Ni etc and can be as thin as 20 nanometres. The substrate is removed to produce an LED array on a metal backing.

D5 recites a micro-machined electrode array of a polyimide substrate, a layer of Ti, Pt, Au or an Au/Pt alloy.

In D6 portions of a platinum sheet are removed using EDM to produce an electrically conductive component.

None of the cited documents D1 to D6 are considered to disclose the features of independent claims 1 or 27. Further none of documents D2 to D6 are considered to disclose the features of independent claim 19.

DEPT. OF TRADE AND CUSTOMS
AUSTRALIA